National Defence / Défense nationale

TRIAL RUN: A TEST OF AN UNCONVENTIONAL CONCEPT FOR TRIALS OF COLD-WEATHER CLOTHING

by

R.J. Osczevski
Environmental Protection Section
Protective Sciences Division

DEFENCE RESEARCH ESTABLISHMENT OTTAWA
REPORT NO. 945

PCN
051LC11

August 1986
Ottawa

ABSTRACT

This paper discusses the failings of conventional small-scale exercises as trials of new and of in-use equipment and clothing for cold weather, and suggests a new type of trial. This trial concept was tested during a seven hundred kilometre, eight day patrol by snowmobile in the Canadian North. Compared to a previous, more conventional trial, a more rigorous test of clothing and equipment is shown to have resulted. Observations of performance incentives and behaviour as they pertain to the concept of the trial are discussed.

RÉSUMÉ

Ce rapport discute des défauts des essais conventionnels de matériel et vêtements de protection contre le froid. Un nouveau type d'essai est proposé et exécuté pendant un trajet en motoneige de 700 km d'une durée de huit jours. Il fut demontré qu'un essai plus rigoureux en a resulté. Inclus dans ce rapport sont des reflexions sur la motivation et le comportement se rapportant à ce nouveau concept d'essai.

1.0 INTRODUCTION

In February of 1986 members of the Environmental Protection Section (EPS), R.J. Osczevski, L.D. Reed and J.B. Cain, travelled by snowmobile for eight days over a 700 kilometre route on the west coast of James Bay. This exercise was conceived as a rehearsal for a proposed trial of cold weather clothing and equipment to take place at a later date. Trial Run, as it was known, was used to test the feasibility of such long range unsupported overland movements; to gather logistic information required to plan them; to gain experience in this method of travel; to carry out specific measurements on clothing and shelter systems during a period of prolonged use; to reconnoitre two possible routes, and, perhaps most importantly, to examine the concept of such exercises as effective trials of cold weather equipment. In conventional trials, the participants lack the incentive to sustain prolonged exposure to cold which might be expected in a combat situation. Trial Run was a test of one means of providing increased incentive, thus ensuring a more rigorous test of protective equipment. This aspect of the trial, including both subjective assessments and objective measures, will be discussed in this report.

2.0 CONVENTIONAL TRIALS

2.1 BEHAVIOURAL COMPENSATION

On an exercise in cold weather, clothing inadequacy is usually compensated for by behaviour. Many tasks require more time as personnel find less efficient but less painful ways to carry them out. Exposure times are shortened. More time is spent in heated shelters or vehicles. Adverse weather may limit the activities of units. The cold provides an honorable excuse for not carrying out certain tasks and for disregarding training and tactical considerations (1). Commanders, who are responsible for the well-being of their troops, select routes of march and activities which reduce exposure to wind and cold to minimize the risk of incurring cold casualties. These changes contribute to a reduction in military effectiveness which worsens with the severity of the environmental

conditions. Both individuals and units adjust their exposure to the environment to remain at an acceptable level of comfort. Thus cold injuries occur only rarely.

All too often arctic winter exercises turn into survival exercises in which very little of a military nature is accomplished. This is rarely seen as a failure of the protective clothing to allow effective military operations in the cold, rather, the fact that all concerned successfully avoid becoming cold casualties is usually seen as proof of its adequacy.

Much emphasis is placed on cold injury statistics from exercises in assessing the effectiveness of cold weather clothing and equipment. A high incidence of cold injury is obvious proof of failure. Unfortunately, a low incidence is often seen as proof of adequacy. This results in the delusion that equipment is adequate for combat because it appears to be adequate for exercises (2). The evidence of history suggests that this has been a frequent if not universal misapprehension. Many armies have entered upon a cold battlefield confident of their equipment to discover that while it was adequate in peacetime, it fails in combat.

2.2 COMBAT

In combat the most significant hazard is no longer the cold, but the enemy. Neither the individual nor the unit may be able to afford the luxury of compensatory behaviour. Men will be highly motivated to endure personal hardship for tactical advantage or to ensure their survival. There will be a premium on military effectiveness. In these conditions, challenged by prolonged and acute exposure to the hazards of the environment, the deficiencies of protective equipment become obvious, and the rate of cold injury increases with the intensity of combat action (3). By this time, of course, it is largely too late to take corrective action.

A new type of trial is required in order to identify deficiencies in peacetime when there is time to find optimum solutions.

3.0 THE NEW TRIAL CONCEPT

3.1 INCENTIVES

There is a maximum level of cold discomfort which an individual will voluntarily tolerate. This level is set by such factors as health, and motivation. When discomfort exceeds this level, action is taken to reduce it by limiting or avoiding exposure to the cold. Highly motivated individuals might endure great hardship, and even injury in a worthwhile cause. With low motivation, even minor discomfort might be considered unacceptable. Rational human beings avoid the punishment of unnecessary discomfort.

To be effective, a trial must provide the participants with a reason for enduring some otherwise avoidable hardship. If they can adopt a goal personally, they will labour more effectively in its attainment. Hardship must be seen as worthwile. Military trial subjects are, of course, subject to military discipline. Authority can be useful in providing some incentive on peacetime exercises, but its utility will probably be limited. It is always easier to lead a group in a direction it wants to go. The challenge to the leader is to make attainment of the goals of the exercise important to his men. This is a task which is easier if the goals have some intrinsic attractiveness. This can be illustrated by previous EPS experience on Exercise Rapier Thrust '79 and Exercise Polarguard.

3.2 EXERCISE RAPIER THRUST '79

In January of 1979, EPS personnel took part in Exercise Rapier Thrust in the BC interior. The occasion was used to carry out a two-day trial of experimental clothing and load carrying equipment. Near the bivouac of the unit to which they were attached was a small mountain. The foot of the mountain was about ten kilometres from the Alaska highway -- a reasonable distance for a two-day patrol. As it was approached, the top became more compelling. Time was limited as arrangements had been made for a vehicle to pick up the team at the highway after two days, to return them to the company location. On arriving at the foot of the mountain on the evening of the first day it was decided that it would be just possible to

reach the top and still make the rendezvous. The attraction of the mountain top and the time limit provided incentive to greatly exceed normal efforts on the second day when nineteen kilometres out of the total of twenty-seven were covered, including the pre-dawn hike to the top of the small mountain.

3.3 EXERCISE POLARGUARD

Two months later the same personel carried out an independent trial of the same systems in the New Viking training area at Ft. Churchill, Manitoba. This trial, known locally as Exercise Polarguard was designed to simulate an infantry patrol after the fashion of the New Viking Exercises. In a four-day period, the four DREO personnel involved covered a total distance of thirty-seven kilometres. The average day included just over four hours of patrolling. Plans had been more ambitious, calling for a significantly greater distance, however there were no particularly compelling objectives. The presence of an empty but heated building belonging to the Department of National Defence (R1) was also partly responsible for limiting the distance covered. It was used for a lunch halt which lasted until the next morning. The warm shelter was just too convenient, too comfortable, and too safe, in contrast to the conditions outside its walls. A summary of these two exercises was published in reference (4).

3.4 OBJECTIVES AND DISTRACTIONS

In the first case, clearly defined and compelling objectives, the mountain top and the highway, operated to extend the range of the trial. In the second case, the lack of any attractive goals contributed to a diminution of efforts. This was complicated by the existence of a very attractive refuge in the form of a heated building which offered convenient security and comfort. Unless there is a good reason to be outside, even the questionable comforts of a ten-man arctic tent can seem to be a comparative refuge. This is probably unavoidable as a tent is probably essential on a trial. However, every effort should be made to avoid areas where there are heated buildings available which might become "temporary" shelters. Even a day's travel distant, such refuges can be too close for discomfort.

4.0 TRIAL PROPOSAL

4.1 BACKGROUND

A trial protocol was developed applying these lessons which, it was hoped, would challenge the participants sufficiently to ensure that they would have the incentive to perform effectively. The Mobile Command Training Plan was consulted to ensure that the trial would have some relevance to potential military operations in the North (5). The Plan stipulates that the ability of FMC units to operate independently over distances of hundreds of kilometres in the North, particularly over sea-ice, is a vital requirement for defence and for the protection of sovereignty. This suggested that oversnow vehicles would probably be used with greater frequency in the future. Experience in this mode of travel would thus be useful to section personnel when considering future research projects.

4.2 ROUTE

It was proposed to travel the coasts of James and Hudson Bays from Moosonee to Churchill, a total distance of 1600 kilometres. Both ends of this route are accessible by rail. The route should offer snow conditions ranging from soft sub-arctic snow to the wind hardened snow typical of high arctic locations. There is a stable, safe and comparatively smooth platform of land-fast ice which forms in the shallow water along this coast. There is also a high probability of encountering low winter temperatures and high windspeeds. Inhabited areas are rare and can be bypassed, avoiding the problems of heated buildings. The lure of uninhabited, untravelled and rarely seen country, would be a useful incentive to travel. The distance itself would demand maximum efforts of the participants. Each day of travel would bring the conclusion that much closer. Since this trip has not been previously accomplished, although it has in the past been suggested that it might be a useful training run for the Canadian Armed Forces (6), precedence would also add incentive.

5.0 TRIAL RUN

5.1 AN EXPEDITION TO DISCOVER THE WEST POLE

As was discussed in the introduction, before attempting this rather ambitious task, it was decided that a trial run was advisable. Prior to this event, the cumulative experience with snowmobiles of the three trial participants amounted to less than twenty hours. All had taken a repair and maintenance course at the Bombardier Training Centre, and had previous cold weather experience. Three snowmobiles were used on the trial: an Alpine and a Spirit on loan from DCMEM, and a new Elan. With the exception of mitts and mukluks, Canadian Forces cold weather clothing was not used. Clothing having increased insulation value and improved wind protection was worn instead. This clothing had been designed by EPS personnel, and had been tested and improved on a number of occasions after conventional exercises and independent trials.

Hudson Bay, as represented by Cape Henrietta Maria, provided a convenient goal, a sort of a "West Pole". The round trip distance from Moosonee is approximately 1100 kilometres, which slightly exceeds the longest recorded unsupported journey by snowmobile. This fact was used to provide some additional incentive.

North of Moosonee, a winter snowroad exists over which large tractor trains haul freight to the three communities on the coast. It was proposed to travel initially along the snowroad, and later on the land-fast ice or the beach. The return route would follow the coast for the whole distance in order to provide a comparison of the snowroad and the ice as alternate routes for the main trial.

Prior to leaving, arrangements were made and a date set to return by train from Moosonee to Cochrane where a truck and staff car with their drivers would be waiting. This limited the time for the trial to nine days. The trial was carried out on an eight day schedule, holding one day in reserve. Daily distance goals were set which were based on predictions of average speeds with changing sledge loads.

5.2 CONDUCT OF TRIAL RUN

The first day did not go as planned. It took much longer to load the sledges and make other final preparations than had been expected. One of the snowmobiles developed electrical problems. Finally, at 1430 h, the three snowmobiles left Moosonee on the snowroad. An early stop was made in order to have daylight for pitching camp the first time. In about two hours, 37 kilometres were covered. Although this was short of the day's goal by about 63 kilometres, we were encouraged by the fact that our cruising speed was much higher than had been expected. The average speed, however, was close to the pre-trial prediction, as many unforeseen stops were necessary for a variety of reasons. Better average speeds were expected with experience. We had, in two hours, travelled as far as many foot patrols do in two or three days.

The second day was marred by a late start. Again, efficiency was expected to increase with practice. We did better, covering 96 kilometres, but we were now 72 kilometres behind the projection.

Although the third day started at 0600, we still did not get away until 1015 h. On this day, we had planned to leave the road and travel out onto the ice of the bay. On crossing a large river, two parallel islands were expected. We planned to use the third channel to travel to the coast. From the first and second channels, James Bay was seen through blowing snow as a white, featureless blank space. The third channel failed to materialize. We were crossing the river closer to the coast than we thought, where there was only one large island (the road is not mapped). Because of this error, we were committed to travel the road longer than planned. It was an error which none of us greatly regretted. The road had an aura of safety. The distance for the day was 98 kilometres. We were now 104 kilometres off the pace. There was still the extra day, and the hope that travel would be faster on the bay.

The fourth day started at 0630. This time we were away earlier at 0915. In order to avoid the last of the three communities on the coast, we left the road, driving down a convenient river to its mouth. Just before noon the daily halt for scheduled radio contact (the sked) was made on bare ice at the river mouth. There was a general impression that the trial had at last begun. Prospects for fast travel seemed excellent. The flat, bare ice proved to be a local phenomenon, however, and the average speed fell. Navigation was more difficult in falling snow and ground drift. The surface was rougher. Later that afternoon we made camp in the shelter of a creek mouth on a wooded point. Beyond the point, the tree-line withdrew from the coast, giving it a barren, uninviting aspect. On some maps, the line dividing Sub-arctic from Arctic meets the coast at this point. It certainly appeared that there was a dramatic change. To avoid making camp on the exposed beach, we stopped an hour earlier than usual, having covered 95 kilometres. It had become obvious that our goal

was out of our reach given the limited time available to us. We were now 142 kilometres short of our projection, and 326 kilometres out of Moosonee.

The fifth day, despite arising at 0530 h, saw another late morning start. We decided to travel north until the noon radio sked, then turn back. It had became difficult to drive north knowing that it was taking us farther away from Moosonee which had become our new goal. We had also entered enemy territory, so to speak, as the probability of encountering polar bears, though still small, was higher in this region. This would have greatly complicated our camp routine. At a point 23 kilometres north of the last camp, we turned back, after a brief and tentative reconnaissance of the ice a short distance out to sea.

The new goal of getting back was an easy one to adopt. It was also very compelling. Coffey, when at Defence Research Northern Laboratory, noted: "Undoubtedly the urge to get things over with will operate strongly in favour of good performance and it is suggested that this incentive is an excellent one to take advantage of when heavy demands have to be placed on troops in an arctic situation. We have noted evidence of this incentive operating to advantage on a number of exercises ... where troops were willing to extend themselves considerably for the sake of getting things wound up and over with (7)".

The distance travelled this day was 88 kilometres.

It took five hours to get going on the sixth day. One of the snowmobiles broke down and the sked was missed. At least two hours were lost in effecting a repair. Unsure of the reliability of the repair, it was tempting to return to the relative security of the road on reaching the point at which we had left it a couple of days earlier. This would have meant that neither of our major geographical goals would have been accomplished, and, as the repair was still sound, it was decided to continue on the coast. We drove an hour later than usual, stopping after sunset, having covered 50 kilometres.

Although the seventh day began at 0630, we again had a late start. Towards the end of this day's travel when 112 kilometres were covered, a visible goal in the form of a prominent point of land helped to extend our efforts. This point was visible for at least 20 kilometres.

On the eighth day, the remaining 124 kilometres were covered. We arrived in Moosonee after dark, but in time for dinner at the hotel. The urge to get it over with had been very strong. Much of the last half of the day we had been forced to travel at about half speed where the surface was rough because one of the snowmobiles was damaged.

6.0 ANALYSIS OF INCENTIVES

6.1 OBJECTIVE MEASURES

A useful measure of the effectiveness of Trial Run in motivating its participants is the time they spend outside of heated shelter. Unfortunately, on Trial Run, a detailed log of activities was not kept. However, from the engine-hour meter on one of the snowmobiles, on a typical day, the engine was running for six and one half hours. An hour can be added in the morning before starting the engines, another for the noon radio sked and refuelling halts, and at least one more while working in camp after engines had been shut off. Time spent outside would then total about nine and a half hours with a period of continuous exposure lasting at least eight hours.

It might be argued that the observer, by becoming part of the experiment, has almost certainly affected the outcome. Fortunately, the author was also the organizer of Exercise Polarguard. The participants of this exercise were also clothing researchers intent on assessing clothing and load transport systems. It thus provides a good benchmark against which the success of the trial concept can be gauged.

On Exercise Polarguard, the four hours of "patrolling" were divided into two periods by a lengthy lunch stop in a heated tent or building. In total perhaps five hours were spent outside per day on this trial. This does not seem particularly impressive in hindsight, but it is completely equivalent to military exercise experience.

During much of the time that the present arctic clothing system used by the Canadian Forces was being developed and tested, the New Viking series of exercises was underway. It was used on occasion for troop trials of new equipment. One of these exercises was intensively studied (8). After the first week of familiarization and training, a patrol was undertaken which lasted five days. On the average, four hours per day were spent patrolling, including about an hour of resting. Eight kilometres per day were covered. An hour and a quarter were spent outside while in bivouac, and the remaining nineteen hours or so were occupied by eating, sleeping and leisure. The study does not state if a tent was used for a lunch halt, but this is apparently standard procedure.

In total, during Trial Run, nearly twice as much time was spent outside as during Exercise Polarguard. The participants were continuously outside of shelters for periods which were four times as long.

Heating fuel consumption can be used as an indicator of the dependence on heated shelters. On the basis of experience gained during a conventional exercise with the same style of tent, it had been estimated that 36 litres of naphtha would be required for nine days. During this trial, only about 11 litres were used over the period of eight days.

6.2 SUBJECTIVE ASSESSMENT

In keeping with historical precedent, we entered upon this cold "battlefield" supremely confident that our protective clothing was adequate to the task we were about to undertake. It had been tested on many previous trials and not found wanting. The previous winter two of us had worn that year's version during a week long excursion in mid-winter 150 kilometres north of Yellowknife which included an overnight foot patrol and a 30 km snowmobile trip. The temperature had been as low as -51°C, and for much of the time it had been in the minus thirties and forties. The clothing worn on Trial Run did not arrive until the day before we were to leave Ottawa, but we were not concerned. Clothing was the least of our problems.

During the trial, the temperature ranged between about -5°C and -30°C. Wind speeds, especially on the bay, were moderate on some days, ranging up to 35 kilometres per hour. Wind had been expected if only from the motion of the snowmobiles, and the clothing was designed with this in mind, being made with completely windproof shells.

It came as a great surprise then that on each of the last five days in particular, two of the three members of the trial spent the last two to three hours of travel gradually becoming more and more miserably cold. Challenged by prolonged and acute exposure to the cold and other stresses of travelling by snowmobile, deficiencies had become painfully obvious.

The drivers of the two smaller machines experienced a rough, cold ride, particularly over the drifted snow covering the sea-ice. These last days were a fatiguing and an acutely uncomfortable experience which we are not anxious to repeat. The Alpine driver was less affected by cold but found the experience no less fatiguing.

6.3 GENERAL OBSERVATIONS

The distance we had to travel did not begin to put "pressure" on us until we had an appreciation of the scale of the task. On the snowroad, there was little by which to gauge progress. Only one snowmobile was equipped with an odometer. Travelling was simply a matter of following the lead snowmobile, or the road, and trying to keep the sledge out of the ruts. Much of the time the treeline, which paralleled our route along the coast, was only a distant dark marking which did not help in visuallizing progress. Points of land, however became short term goals towards which progress could be perceived. These visible goals provided incentive to travel, especially before stopping for the night. An anomally such as a point or a communications tower provided a reason for extending travel.

The basic plan of the trial, a trip out and back again, proved to be a disadvantage. With this kind of route, each day's travel makes the total trip that much longer, until of course, turning to return. The time limit was not a very effective incentive to travel. Instead, the failure to adhere to the schedule which it necessitated was discouraging, and it provided an excuse to shorten the exercise.

On day four, with the growing realization that our primary goal was unobtainable, the change in terrain had been a good enough reason to stop an hour early and get some relief from the cold and fatigue. On the return leg, driven by a desire to get it over with, we travelled an hour later not stopping until after sunset on each of the last three days.

The incentive to get it over with was strongly felt. On the last two days the distance travelled was greater than the average of previous "typical" days by 19% and 32%. Had the trip been planned as a one-way journey, this factor might have operated for a longer period of time.

Hudson Bay was not, in reality, the primary goal of the trial. The primary goal was to examine such ventures as highly motivating situations which could be used as effective trials of equipment. There were other secondary goals, i.e., exploring the coastal route parallel to the road, collecting snowmobile performance data and performing some experiments with the clothing and shelter systems, communications and location systems. All of this made it easier to abandon the fictional goal of reaching our "West Pole".

There was a certain reluctance to leave the safety of communities and the road. The snowroad might have been useful in that it allowed a period of time to get used to the idea. It was familiar, and offered a sense of security. The coast, as viewed from the road, was the epitome of the "unknown": sea-ice and sky met in a white, featureless void. By the time we reached the bay ice, we had acquired some confidence in our vehicles and travel methods. After half a day of travel on the ice, it lost much of its strangeness.

A curious feature of the typical day was the difficulty in getting going in the morning. It might have been related to the previously noted problem with heated shelters or it might have been due to fatigue and inexperience. We are not the only such party to be troubled by this difficulty. Amundsen's first week-long journey in Antarctica, a combined trial and cache-laying trip, was troubled by a similar problem. It took four hours to strike camp and get away in the morning. Amundsen's comment was: "Dawdling" (9).

A qualified behavioural scientist might find such a trial an interesting research opportunity.

There are undoubtedly other ways to arrange for the proper incentive to ensure a valid test of means, methods and men. One such alternative would be to arrange some competition between units. This could be head-to-head contest with another unit -- undoubtedly some of this is present in large exercises which employ units as opposing forces -- or it could be an attempt to better a standard set previously by some other unit. The EPS performance on Trial Run could be a useful incentive to the participants of future trials in this area.

7.0 CONCLUSION

Although the attraction of the primary geographic goal was diminished by the existance of numerous secondary tasks, distance still provided the incentive to spend much longer periods of time out of shelters, even at the cost of significant discomfort. Because of this, previously unsuspected limitations and deficiencies in the clothing system were detectible.

8.0 REFERENCES

1. Coffey, M.F., Psychological Studies of Adjustment to Cold on Northern Military Exercises in Winter, OAR Paper VI, 5th Defence Research Board Symposium, Canada, 1953.

2. Osczevski, R.J., Delusions of Adequacy: Protective Clothing on Peacetime Military Exercises, Commonwealth Defence Sciences Organization Symposium, 1984.

3. Whayne, T.F. Col, DeBakey, M.F., Cold Injury, Ground Type, Office of Surgeon General, Department of the Army, Washington, DC, 1958.

4. Osczevski, R.J., Experimental Cold-Weather Clothing, Defence Research Establishment Ottawa TN 81-13, 1981.

5. Mobile Command Arctic Training Plan 1980-85, FMC 3350-9 (OpTrg).

6. Rowley, G.W., Personal Communication.

7. Coffey, M.F., The Human Factor in Arctic Operations, Defence Research Northern Laboratory Report No. 9/55.

8. Allen, C.L., O'Hara W.J., Energy Expenditure of Infantry Patrols During an Arctic Winter Exercise, Defence and Civil Institute of Environmental Medicine, Report No. 73-R-985, 1973.

9. Huntford, R., The Last Place on Earth, Atheneum, New York, p 327, 1986.

UNCLASSIFIED
Security Classification

DOCUMENT CONTROL DATA - R & D
(Security classification of title, body of abstract and indexing annotation must be entered when the overall document is classified)

1. ORIGINATING ACTIVITY DEFENCE RESEARCH ESTABLISHMENT OTTAWA Department of National Defence Ottawa, Ontario CANADA K1A 0Z4	2a. DOCUMENT SECURITY CLASSIFICATION UNCLASSIFIED 2b. GROUP

3. DOCUMENT TITLE
TRIAL RUN: A TEST OF AN UNCONVENTIONAL CONCEPT FOR TRIALS OF COLD-WEATHER CLOTHING (U)

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)
REPORT

5. AUTHOR(S) (Last name, first name, middle initial)
OSCZEVSKI, Randall J.

6. DOCUMENT DATE AUGUST 1986	7a. TOTAL NO. OF PAGES 13	7b. NO. OF REFS 9
8a. PROJECT OR GRANT NO. 051LC11	9a. ORIGINATOR'S DOCUMENT NUMBER(S) DREO REPORT NO. 945	
8b. CONTRACT NO	9b. OTHER DOCUMENT NO.(S) (Any other numbers that may be assigned this document)	

10. DISTRIBUTION STATEMENT
UNLIMITED

11. SUPPLEMENTARY NOTES	12. SPONSORING ACTIVITY

13. ABSTRACT

This paper discusses the failings of conventional small-scale exercises and trials of new and of in-use equipment and clothing for cold weather, and suggests a new type of trial. This trial concept was tested during a seven hundred kilometre, eight day patrol by snowmobile in the Canadian North. Compared to a previous, more conventional trial, a more rigorous test of clothing and equipment is shown to have resulted. Observations of performance incentives and behaviour as they pertain to the concept of the trial are discussed.

DSIS

UNCLASSIFIED

Security Classification

KEY WORDS

ARCTIC REGIONS
COLD INJURIES
COLD WEATHER CLOTHING
COLD WEATHER TESTS
FROSTBITE
HUMAN FACTORS
INCENTIVES
MILITARY TRAINING
MOTIVATION
SNOWMOBILES

INSTRUCTIONS

1. ORIGINATING ACTIVITY: Enter the name and address of the organization issuing the document.

2a. DOCUMENT SECURITY CLASSIFICATION: Enter the overall security classification of the document including special warning terms whenever applicable.

2b. GROUP: Enter security reclassification group number. The three groups are defined in Appendix 'M' of the DRB Security Regulations.

3. DOCUMENT TITLE: Enter the complete document title in all capital letters. Titles in all cases should be unclassified. If a sufficiently descriptive title cannot be selected without classification, show title classification with the usual one-capital-letter abbreviation in parentheses immediately following the title.

4. DESCRIPTIVE NOTES: Enter the category of document, e.g. technical report, technical note or technical letter. If appropriate, enter the type of document, e.g. interim, progress, summary, annual or final. Give the inclusive dates when a specific reporting period is covered.

5. AUTHOR(S): Enter the name(s) of author(s) as shown on or in the document. Enter last name, first name, middle initial. If military, show rank. The name of the principal author is an absolute minimum requirement.

6. DOCUMENT DATE: Enter the date (month, year) of Establishment approval for publication of the document.

7a. TOTAL NUMBER OF PAGES: The total page count should follow normal pagination procedures, i.e., enter the number of pages containing information.

7b. NUMBER OF REFERENCES: Enter the total number of references cited in the document.

8a. PROJECT OR GRANT NUMBER: If appropriate, enter the applicable research and development project or grant number under which the document was written.

8b. CONTRACT NUMBER: If appropriate, enter the applicable number under which the document was written.

9a. ORIGINATOR'S DOCUMENT NUMBER(S): Enter the official document number by which the document will be identified and controlled by the originating activity. This number must be unique to this document.

9b. OTHER DOCUMENT NUMBER(S): If the document has been assigned any other document numbers (either by the originator or by the sponsor), also enter this number(s).

10. DISTRIBUTION STATEMENT: Enter any limitations on further dissemination of the document, other than those imposed by security classification, using standard statements such as:

(1) "Qualified requesters may obtain copies of this document from their defence documentation center."

(2) "Announcement and dissemination of this document is not authorized without prior approval from originating activity."

11. SUPPLEMENTARY NOTES: Use for additional explanatory notes.

12. SPONSORING ACTIVITY: Enter the name of the departmental project office or laboratory sponsoring the research and development. Include address.

13. ABSTRACT: Enter an abstract giving a brief and factual summary of the document, even though it may also appear elsewhere in the body of the document itself. It is highly desirable that the abstract of classified documents be unclassified. Each paragraph of the abstract shall end with an indication of the security classification of the information in the paragraph (unless the document itself is unclassified) represented as (TS), (S), (C), (R), or (U).

The length of the abstract should be limited to 20 single-spaced standard typewritten lines; 7¾ inches long.

14. KEY WORDS: Key words are technically meaningful terms or short phrases that characterize a document and could be helpful in cataloging the document. Key words should be selected so that no security classification is required. Identifiers, such as equipment model designation, trade name, military project code name, geographic location, may be used as key words but will be followed by an indication of technical context.